

SUBJECT CODE:- 8190
FACULTY OF ENGINEERING AND TECHNOLOGY
M.E.(Electrical Power System) Examination Nov/Dec 2015
Power System Planning & Eco. Operation
(Revised)

[Time: Three Hours]

[Max. Marks: 80]

“Please check whether you have got the right question paper.”

- N.B i) Solve two questions from each section.
 ii) Assume suitable data, wherever necessary.

Section A

- Q.1 a) Explain the different planning tools for power system. 10
 b) Explain spatial load forecasting 10
- Q.2 a) What is power distribution planning? Discuss different scenarios 10
 b) Explain the electricity regulation 10
- Q.3 Write short note on any three 20
 i) Forecast techniques & its modelling
 ii) Different software packages used in power system planning
 iii) Functions of planning organisation
 iv) Power generation planning & scenarios

Section-B

- Q.4 a) Explain equality & inequality constraints in power system 10
 b) Explain automatic voltage control in detail 10
- Q.5 a) A two bus system is shown in fig.1 if 100MW is transmitted from plant 1 to the load, a transmission loss of 10MW 10
 is incurred. Find the required generation for each plant & the power received by the load when the system λ is
 Rs. 25/MWh. The incremental fuel cost of the two plants are:

$$\frac{dC_1}{dP_{G1}} = 0.02P_{G1} + 16.00 \quad \text{Rs/MWh}$$

$$\frac{dC_2}{dP_{G2}} = 0.04P_{G2} + 20.00 \quad \text{Rs/MWh}$$



Fig.1 A two bus system

- b) Explain a single area load frequency control 10
- Q.6 a) Explain distributed reactive power compensation by using pi network 10
 b) Explain the input & output characteristics of thermal & hydro generating units 10